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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/649,862

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Der-Zheng Liu

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/649,862	Applicant(s) LIU ET AL.	
	Examiner Kevin M. Burd	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the remarks filed 6/11/2008, is a non-final office action.

Response to Arguments

2. Applicant's representative cites a specific example that discloses the figures and matrices that have been recited in the objection to the specification. Applicant's representative states this reference has been provided. However, a copy is neither in the remarks nor in the IDS filed 6/11/2008. The examiner requests a copy of this material so the record is clear and complete.

Applicant's representative states on page 3, first paragraph applicants do not recall precisely what if any particular publication was a source of figure 1A and 1B. A possible source of the figures is recited and needs to be provided to the examiner as stated in the above paragraph. Applicant's representative also states prior to the filing of the instant application, applicants had never reviewed the reference JP 09-153882. After reviewing the after final remarks and further review of the previous office action and specification, the examiner has determined that figures 1A and 1B do not provide enough detail to maintain the examiner's previous assertion that the description on pages 3, line 22 to page 4, line 29 is prior art. The previous rejection of the claims is withdrawn. A new rejection of the claims is stated below. Kaneko (JP 09-153882) discloses the claimed limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaneko (JP 09-153882). (A translation of this reference was previously provided and is cited in the following rejection of the claims.)

Regarding claim 1, Kaneko discloses a method of estimating an I/Q imbalance parameter of a receiver. Figure 4 discloses the system. A first signal is modulated by a first and second modulated carrier. The first signal's I component is modulated in multiplier 43 (paragraph 0059). The first signal's Q component will be modulated by multiplier 44 (paragraph 0059). The I and Q components will be combined in adder 45 and transmitted to a receiver. The multipliers 43 and 44 and adder 45 comprise the modulation path of the transmitter. The received signal is demodulated by a first and second demodulation carrier in multipliers 47 and 48 (paragraph 0061). The first demodulation path is the portion of the receiver that processes the I component of the received signal and the second demodulation path is the portion of the receiver that processes the Q component of the received signal. The transmitter will transmit a second signal in the same manner as the first signal (paragraph 0059). The receiver will receive the second signal in the same manner as the first signal. The system will transmit a positive and negative carrier wave where the frequencies of the carrier waves

are symmetrical in the frequency domain (paragraph 0056). The signals will be received in the receiver. The signals are recited in paragraph 0059.

Regarding claim 2, as stated above, the multipliers 43 and 44 and adder 45 comprise the modulation path of the transmitter. The first demodulation path is the portion of the receiver that processes the I component of the received signal and the second demodulation path is the portion of the receiver that processes the Q component of the received signal.

Regarding claims 3-7, the first and second signals are recited in paragraph 0059.

Regarding claim 8, Kaneko discloses a method of estimating an I/Q imbalance parameter of a receiver. Figure 4 discloses the system. A first signal is modulated by a first and second modulated carrier. The first signal's I component is modulated in multiplier 43 (paragraph 0059). The first signal's Q component will be modulated by multiplier 44 (paragraph 0059). The I and Q components will be combined in adder 45 and transmitted to a receiver. The received signal is demodulated by a first and second demodulation carrier in multipliers 47 and 48 (paragraph 0061). The transmitter will transmit a second signal in the same manner as the first signal (paragraph 0059). The receiver will receive the second signal in the same manner as the first signal. The system will transmit a positive and negative carrier wave where the frequencies of the carrier waves are symmetrical in the frequency domain (paragraph 0056). The signals will be received in the receiver. The signals are recited in paragraph 0059.

Regarding claim 9, as stated above, the multipliers 43 and 44 and adder 45 comprise the modulation path of the transmitter. The first demodulation path is the

portion of the receiver that processes the I component of the received signal and the second demodulation path is the portion of the receiver that processes the Q component of the received signal.

Regarding claims 10 and 11, the first and second signals are recited in paragraph 0059.

Regarding claim 12, Kaneko discloses an apparatus for estimating an I/Q imbalance. Figure 4 discloses the transmission system. A first signal is modulated by a first and second modulated carrier. The first signal's I component is modulated in multiplier 43 (paragraph 0059). The first signal's Q component will be modulated by multiplier 44 (paragraph 0059). The I and Q components will be combined in adder 45 and transmitted to a receiver. The received signal is demodulated by a first and second demodulation carrier in multipliers 47 and 48 (paragraph 0061). The transmitter will transmit a second signal in the same manner as the first signal (paragraph 0059). The receiver will receive the second signal in the same manner as the first signal. The system will transmit a positive and negative carrier wave where the frequencies of the carrier waves are symmetrical in the frequency domain (paragraph 0056). The signals will be received in the receiver. The signals are recited in paragraph 0059.

Regarding claim 13, the receiver comprises an IDFT operation (paragraph 0056).

Regarding claims 14 and 15, the first and second signals are recited in paragraph 0059.

Regarding claim 16, Kaneko discloses an apparatus for estimating an I/Q imbalance. Figure 4 discloses the communication system. A first signal is modulated by

a first and second modulated carrier. The first signal's I component is modulated in multiplier 43 (paragraph 0059). The first signal's Q component will be modulated by multiplier 44 (paragraph 0059). The I and Q components will be combined in adder 45 and transmitted to a receiver. The multipliers 43 and 44 and adder 45 comprise the modulation path of the transmitter. The received signal is demodulated by a first and second demodulation carrier in multipliers 47 and 48 (paragraph 0061). The first demodulation path is the portion of the receiver that processes the I component of the received signal and the second demodulation path is the portion of the receiver that processes the Q component of the received signal. The transmitter will transmit a second signal in the same manner as the first signal (paragraph 0059). The receiver will receive the second signal in the same manner as the first signal. The system will transmit a positive and negative carrier wave where the frequencies of the carrier waves are symmetrical in the frequency domain (paragraph 0056). The signals will be received in the receiver. The signals are recited in paragraph 0059.

Regarding claim 17, the receiver comprises an IDFT operation (paragraph 0056).

Regarding claims 18-22, the first and second signals are recited in paragraph 0059.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Burd/
Primary Examiner, Art Unit 2611
6/30/2008